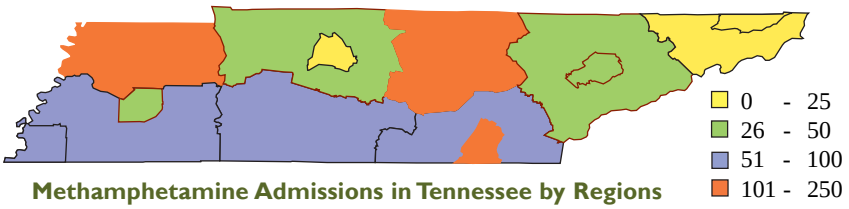
Substance Abuse in Tennessee Vol. 1, No. 3, 2004

THE SAT REPORT

Satish Kedia, PhD, Institute for Substance Abuse Treatment Evaluation (I-SATE), The University of Memphis

Methamphetamine Abuse in Tennessee: Trends and Treatment Outcomes

Methamphetamine is now the most commonly manufactured controlled substance in the United States, in part because a high-purity product can be made almost anywhere [1]. While the West Coast has been the center of methamphetamine trafficking in the U.S., Tennessee is one of the predominant sites of production in the Southeast; 75% of all methamphetamine lab seizures in this region occur in this state [2]. In 2000, over 200 methamphetamine-producing laboratories were seized; by December of 2003, the number had shot up to 1,150 [3]. This proliferation of illegal labs, mainly small "mom-and-pop" operations, is directly related to the marked increase of methamphetamine and amphetamine abuse.



Methamphetamine Admissions in Tennessee by Regions and Metro Counties (Calender Year 2002)

Research conducted by the Institute for Substance Abuse Treatment Evaluation (I-SATE), in collaboration with the Bureau of Alcohol and Drug Abuse Services, reveals that stimulant abuse in Tennessee as reported among publicly funded clients tripled across a five-year period, from 2.56% in 1998 to 6.07% in 2002. This jump primarily reflects the expansion of methamphetamine abuse in the state.

The problem has become so serious that in April 2004, Governor Phil Bredesen established a Task Force on Methamphetamine Abuse, a 20-member panel that will develop a "comprehensive strategy" for combating the alarming rise in the abuse of this substance and eradicate its manufacturing and trafficking networks in Tennessee.

The Task Force will also address the social consequences of the methamphetamine epidemic, especially upon children [4]. Between January 2002-July 2003, more than 700 children were placed in protective custody as a result of methamphetamine lab seizures. The Tennessee Department of Children's Services expects that number to double this year [5]. In addition to their exposure to a drug-abusing environment, these children were in physical danger; explosion, toxic fumes, poisonous gas, and contaminated groundwater are just a few of the serious health hazards posed by these clandestine operations. By June 2001, 738 children had been found at lab sites, with 271 exposed to chemicals and 8 injured [6].

Highlights

- In 2000, over 200 methamphetamine-producing labs were seized in Tennessee; by December of 2003, this number had shot up to 1,150.
- Between January 2002-July 2003, more than 700 children were placed in protective custody as a result of methamphetamine lab seizures.
- Stimulant abuse tripled across a five-year period, from 2.56% in 1998 to 6.07% in 2002.

THE SAT REPORT (ISSN 1547-6634) is published periodically by the Institute for Substance Abuse Treatment Evaluation (I-SATE) at The University of Memphis. This institute is a collaborative effort between The University of Memphis and the Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health. Copies of this report may be downloaded from http://www.toads.memphis.edu/reports or requested from the I-SATE office.

These lab sites constitute an environmental hazard as well, and the burden on the public treasury to clean each site can run into the thousands of dollars [7]. Methamphetamine abuse will also have an adverse economic impact on the healthcare and criminal justice systems. Research suggests that chronic and even short-term abuse results in brain abnormalities that are linked to violent behavior and aggressive interpersonal exchanges [8]. According to one early study, methamphetamine-related admissions to emergency rooms tripled across four years [9].

Governor Bredesen has asked the Methamphetamine Task Force to make its final recommendations on September 1, 2004. As a first step, the Governor has proposed increasing the penalty for possessing methamphetamine with the intent to sell or distribute from 3-15 years in jail (a Class C felony) to 8-30 years in jail (a Class B felony). But the Task Force will look at a whole range of strategies, including the most effective approaches to treatment and prevention [10].

There is little empirical data on methamphetamine-abusing clients, either regionally or nationally, that might assist Tennessee healthcare professionals, community agencies, and substance abuse treatment facilities in addressing this growing problem. This SAT report is a preliminary attempt to address this gap, providing a summary of trends (1998-2002) and treatment outcomes for clients enrolled in publicly funded facilities in the state during 2002-2003 who reported abusing stimulants such as methamphetamine and amphetamines.

Highlights

- A central nervous system stimulant, methamphetamine is one of the most highly addictive substances abused today.
- Methamphetamine boosts energy levels, but the short- and long-term effects include anxiety, insomnia, paranoia, cardiac arrhythmia, brain damage, and stroke.
- Women who take methamphetamines during pregnancy risk growth retardation in the fetus, premature delivery and developmental disorders in their newborns.

Background

Methamphetamine was first synthesized in 1919 from the organic substance ephedrine. It is a derivative of amphetamine, which was widely prescribed during the 1950s and 1960s to treat depression and obesity. A central nervous system stimulant, methamphetamine is one of the most highly addictive substances abused today. Some common street names for methamphetamine are *speed, meth, crystal, crank,* or *ice*. It can be taken orally as a pill, smoked, snorted, and even injected. Methamphetamine is considered the "poor man's cocaine" because the euphoria lasts for 6 to 8 hours vs. cocaine's 15 to 20 minutes for the same cost. Similarly, methamphetamine creates elation, alertness, and boosts in energy and confidence levels but with a host of adverse side effects. Short- and long-term use results in anxiety, insomnia, paranoia, hallucinations, cardiac arrhythmia, brain damage, and stroke. There are also specific risks for women who take methamphetamines while pregnant: growth retardation in the fetus, premature birth, developmental disorders in their newborns, and lifelong cognitive deficits in their children [11].

Trends in Stimulant Abuse in Tennessee

I-SATE at The University of Memphis tracks substance abuse trends via analysis of patient admission data provided by the Bureau of Alcohol and Drug Abuse Services, a unit of the Tennessee Department of Health. I-SATE collaborates with the Bureau to carry out trends and outcomes research on clients in publicly funded alcohol and drug treatment abuse facilities throughout the state of Tennessee.

A recent 5-year study (1998-2002) conducted by I-SATE revealed increases in the rates of methamphetamine abuse throughout Tennessee, with especially large jumps in the Northwest, Southeast, and Upper-Cumberland regions as well as two metro counties, Hamilton County (Jackson) and Madison County (Chattanooga) (see Table 1). There was also a dramatic rise in the rate of stimulant abuse among White clients, from 4.11% to 9.45%. Although Whites are nine times more likely to abuse stimulants, there was an increase in the African American population as well (.34% in 1998 to 1.25% in 2002). A greater percentage of both males (3% to 6%) and females (3.03% to 8.16%) reported abuse of stimulants across this period. Rates of stimulant abuse in rural areas are higher than those in urban areas; although urban abuse slightly increased, 1.91% in 1998 to 3.33% in 2002, rural rates showed a much

Table 1. Five-Year Trends for Methamphetamine/Amphetamine Admissions in Tennessee (1998-2002) - by Regions and Metro Counties

Regions	1998		1999		2000		2001		2002	
	TA[1]	S/A/M[2]	TA[1]	S/A/M[2]	TA[1]	S/A/M[2]	TA[1]	S/A/M[21]	TA[1]	S/A/M[2]
Northwest	730	30	681	49	685	64	696	68	763	132
Southwest	484	10	418	12	586	30	524	37	629	88
Mid-Cumberland	1288	16	1158	10	1125	23	1235	25	1105	45
South-Central	573	26	492	14	436	30	376	22	380	51
Upper-Cumberland	896	70	868	65	953	151	792	199	779	215
Southeast	385	25	393	51	389	53	306	25	455	97
Northeast	194	5	368	4	957	5	1282	9	1292	24
East	1101	23	838	11	1111	21	1458	32	1222	36
Metro Counties										
Davidson	1670	20	1614	6	1543	6	1836	23	2271	25
Hamilton	1335	61	1317	28	1265	20	973	29	1106	106
Knox	1970	15	1711	20	1632	37	1543	29	1385	26
Madison	395	4	461	12	393	14	576	24	432	32
Shelby	2413	40	2568	23	2345	46	2223	55	3002	76
Sullivan	147	2	443	6	860	5	1079	6	898	2
Totals	**13581**	**347**	**13330**	**311**	**14280**	**505**	**14899**	**583**	**15719**	**955**

Note: This table is based on unduplicated client data for each year.
[1] TA refers to Total admissions.
[2] S/A/M refers to Stimulants, Amphetamines, and Methamphetamines.

greater rise, from 3.33% to 9.10% across the same period [12].

Treatment Outcomes for Tennessee Clients

For a 2002-2003 study specifically examining stimulant abuse among publicly funded clients in Tennessee, I-SATE staff interviewed 166 clients who had indicated at admission that they abused stimulants such as methamphetamine or amphetamine. This population comprised White clients (93.4%) and African American clients (6.6%); 64.4% were male and 35.5% female. They were predominantly adult (96.4%), and 76.5% were high school graduates. All clients (100%) abused stimulants daily. More than two-thirds (66.9%) had a prior arrest record, 19.3% had committed domestic violence, and 68.7% were unemployed [13].

I-SATE researchers found much improvement in clients' lives six months after admission to treatment. A little over 65% reported that they were abstinent from substance abuse. In addition, clients were re-establishing family relations, a critical element in rehabilitation. The proportion of those living with their immediate family went up dramatically, 12% to 50.6%. Employment rates also increased: The percentage of those working full time more than quadrupled, from 9.6% to 45.8%, and those working part time more than tripled, from 4.2% to 12.7%. While 66.9% of clients had arrest records two years prior to treatment, six months after admission only 11.4% of clients had been rearrested. In addi-

Highlights

- 65.1% of clients were abstinent six months after admission.
- At the time of admission, 68.7% of clients were unemployed; six months after admission, only 38.0% of clients were unemployed.
- 66.9% of clients had arrest records two years prior to treatment; this proportion dropped to 11.4% six months after admission.
- Clients' participation in domestic violence, either as perpetrator or victim, was virtually eliminated – 94% reported no involvement.

tion, clients' participation in domestic violence, either as aggressor or victim, was virtually eliminated: six months after admission, 94% reported no involvement. Further, since admission 81.9% of clients reported that their physical health was improved and 62.7% that their performance at school or work was better [14].

Resources

Understanding how to treat methamphetamine abuse effectively presents a challenge to healthcare and substance abuse professionals. Research suggests that methamphetamine has a more serious and long-term impact on cognitive functioning than cocaine, but it is not known whether such changes are permanent. Currently, there is no established pharmacological treatment for methamphetamine addiction, and while it is clear that treatment helps many clients abstain from abuse, there is little empirical data identifying which specific protocol is the most effective [15]. Another challenge facing treatment providers is that many clients are abusing methamphetamine together with other substances, such as alcohol and marijuana, which can make treatment more complicated [16].

A number of reliable Internet resources document current research on the most promising treatment regimens. The Methamphetamine Treatment Project at UCLA (www.methamphetamine.org) is conducting a study comparing outcomes for the Matrix model (www.nida.drug abuse.gov/BTDP/Effective/Rawson.html), an outpatient treatment program for methamphetamine abusers that combines behavioral, educational, and 12-step counseling techniques, with those for usual treatment strategies in seven drug treatment facilities in California. The Agency for Healthcare Research and Quality of the U.S. Department of Health and Human Services offers healthcare professionals the National Guideline Clearinghouse (www.guideline.gov/summary/summary.aspx?doc_id=2540&nbr=1766&string=methamphetamine), a database of empirically grounded clinical practice guidelines for the treatment of stimulants.

Citations:

1. Drug Enforcement Administration (DEA). (1996). *Methamphetamine situation in the United States: Drug intelligence report*. Washington, DC: Department of Justice, Drug Enforcement Administration.
2. www.usdoj.gov/dea/pubs/states/tennessee.html, accessed April 23, 2004.
3. www.usdoj.gov/dea/pubs/states/tennessee.html, accessed April 26, 2004; http://www.mapinc.org/drugnews/v03/n2003/a07.html?397, accessed May 26, 2004.
4. State of Tennessee Executive Order No. 18, the Governor's Task Force on Methamphetamine Abuse, available from www.state.tn.us/sos/pub/execorders/execorders-bred18.pdf
5. www.chattanoogan.com/articles/article_49022.asp, accessed April 14, 2004.
6. www.usdoj.gov/dea/pubs/intel/intel010621p.html; accessed April 27, 2004; http://www.fcsheriff.org/meth.htm, accessed April 14, 2004.
7. Office of National Drug Control Policy, Department of Justice. (1998). *National methamphetamine drug conference: Conference proceedings, May 28-30, 1997* [Omaha, NE]. Washington, DC: Office of National Drug Control Policy.
8. Buffenstein, A., Heaster, J., & Ko, P. (1999, April). Chronic psychotic illness from methamphetamine. *American Journal of Psychiatry 156*(4): 662; Cohen, J., et al. (2003, Oct-Dec). Abuse and violence: History of men and women in treatment for methamphetamine dependence. *American Journal on Addictions 12*(5): 377-385.
9. http://www.oas.samhsa.gov/NHSDA/treatan/treana13.htm#E10E37, accessed April 30, 2004.
10. www.sitemason.com/newspub/lqXgLm?id=15775&mode=print, accessed April 30, 2002.
11. www.amphetamines.com/methamphetamine, accessed April 27, 2004; www.methamphetamine.org/mtccbasic.htm, accessed April 27, 2004.
12. Kedia, S. (2003). Substance abuse patterns in Tennessee from 1998 to 2002. *The SAT Report, 1*(1), pp. 1-4, Institute for Substance Abuse Treatment Evaluation, University of Memphis.
13. Kedia, S. (2004). *Special report on substance abuse treatment outcomes for stimulants/methamphetamines/amphetamines clients in Tennessee, fiscal year 2002-2003.* Institute for Substance Abuse Treatment Evaluation, University of Memphis, pp. 1-3.
14. Kedia, op cit., pp. 2, 5.
15. Sommerfeld, J. (2001). Beating an addiction to meth: Researchers zero in on brain effects, treatment approaches. Retrieved from http://msnbc.msn.com/id/3076519, accessed April 23, 2004.
16. Kedia, *Special report*, p. 3.

We would like to acknowledge Dr. Stephanie W. Perry, Julie A. Smith, Herb Stone, and Lynn Graham from the Bureau of Alcohol and Drug Abuse Services, Tennessee Department of Health, for their support of this project. We appreciate the contributions of the I-SATE project team: Yvonne R. Boyd, S. Faithe Finley, Sarah Frith, Ava Haynes, Priyanka Jani, Heidi Kenaga, Kavita Kolli, and Linda Sadler.

I-SATE
Institute for Substance Abuse Treatment Evaluation

316 Manning Hall
Memphis, TN 38152-3390
www.toads.memphis.edu
901.678.1753